

DOCUMENT RESUME

ED 426 277

CE 077 971

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TITLE Personality Type Profiles of Beginning Secondary Technical Education Teachers in West Virginia.
PUB DATE 1999-00-00
NOTE 23p.
PUB TYPE Reports - Research (143)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Beginning Teachers; Personality; Personality Measures; *Personality Traits; Secondary Education; *Secondary School Teachers; State Surveys; *Technical Education; *Vocational Education Teachers
IDENTIFIERS *Myers Briggs Type Indicator; West Virginia

ABSTRACT

A study developed and examined personality type preference profiles of beginning secondary technical education teachers in West Virginia. The target population consisted of all beginning secondary technical education teachers (n=34) employed by the West Virginia Department of Education during the 1998-99 school year. The Myers-Briggs Type Indicator (MBTI) was used to gather personal data and categorize personality type. This 126-item forced choice questionnaire elicited preference on 4 dichotomous scales or dimensions that allowed separate indexes for the following: extraversion (E) or introversion (I), sensation (S) or intuition (N), thinking (T) or feeling (F), profile and judging (J) or perception (P). The four major MBTI type components among the respondents were as follows: ESTJ (32%), ESFJ (18%), ISFJ (12%), and ISTJ (9%). Analysis showed respondents were more sensing (27%)/less intuitive (6%) and more judging (27%)/less perceptive (3%). Collected data were also examined according to Keirsey and Bates' (1984) temperament type groupings. Overall, the largest represented temperament type was that of sensing-judging (47%). Teacher educators were recommended to provide prospective teachers with opportunity to use all types of learning strategies and strengthen those not normally preferred. (Appendixes contain 23 references and 6 tables.) (YLB)

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Running head: PERSONALITY TYPE PROFILES

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Personality Type Profiles of Beginning
Secondary Technical Education Teachers
in West Virginia

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Abstract

The purpose of this study was to examine personality type preference profiles of beginning secondary technical education teachers in West Virginia. The Myers-Briggs Type Indicator (MBTI) was used to gather personal data and categorize personality type. The four major MBTI type components were: ESTJ (32%), ESFJ (18%), ISFJ (12%), and ISTJ (9%). A high prevalence of a sensing – judging (SJ) personality temperament was found among respondents. It was recommended that teacher educators should provide prospective teachers with ample opportunity to use all types of learning strategies and to strengthen those types which are not normally preferred.

Personality Type Profiles of Beginning Secondary Technical Education Teachers in West Virginia

It is universally accepted that the teacher is the most important component of education. The current emphasis on educational reform in our nation's school should be forcing us to examine the personality of effective teachers. Personality has been considered an important factor in effective teaching and is evident by volume of past research that has attempted to relate some dimension of personality to effectiveness in teaching.

To date, there is a paucity of information that documents the personality type profile of beginning secondary technical education teachers. As technology increases, teachers must be effective in preparing students for their future roles. The secondary classroom teacher, and the competencies that teacher exhibits, plays a central role in the education of our youth. This is true for trade and industrial and health occupations education teachers in preparing their students for chosen careers. Because the classroom teacher maintains such a central and dominant position in the learning process, educational administrators and teacher educators are continually attempting to better understand that process, with the ultimate goal to improve teaching effectiveness. It was within this context that the present research study was undertaken.

One of the most comprehensive theories developed to explain human personality is Jung's theory of psychological type (Lawrence, 1982; Plessman, 1985). Jung theorized that what appears to be random variation in human behavior is actually quite orderly, logical, and consistent, and is the result of a few basic differences in mental functioning and attitude. These observable differences affect what people perceive, as well as how they draw conclusions about these perceptions (Jung, 1921; Lambert, Rappaport, & Rapport, 1978; Myers, 1980; Myers & McCaulley, 1985; Vogt & Holder, 1988; Weade & Gritzmacher, 1987; Zeisset, 1989).

Isabel Briggs Myers and Katherine Briggs developed the MBTI as a practical means of measuring and understanding individuals behavior according to Jungian theory (Plessman,

1985). MBTI type preference reflects how people consciously prefer to attend to the world, how they choose to perceive that to which they attend, and how judgements are made about those perceptions (Lawrence, 1982; Schultz, 1985).

Purpose and Objectives

The present study was undertaken to develop and examine personality type preference profiles of beginning secondary technical education teachers in West Virginia. Given the potential impact which personality type has on teacher effectiveness and educational success of learners, it is important that baseline data be developed and maintained about the personality preferences of beginning technical education teachers. Specific research objectives for this study included:

1. Determine personality preferences of beginning secondary technical education teachers using the Myers-Briggs Type Indicator (MBTI) preference and Keirsey and Bates' temperament types.
2. Determine mean preference scores for MBTI preferences based on selected variables (gender, educational attainment, age, and vocational content area).

Research Methodology

The target population for this study consisted of all beginning secondary technical education teachers ($N = 34$) employed by the West Virginia Department of Education during the 1998-1999 school year. Participants' names were obtained from three regional teacher educators. Vocational content areas included in the study were health occupations and trade and industrial education teachers. The nature of this study required the entire population of interest be included in the sample.

True (1989) recommends the use of nonprobability saturation sampling when the population is very small or when it is essential to include everyone—as it is for the national census. However, caution is warranted in generalizing the results beyond the accessible sample.

Instrumentation

The MBTI Form G was used to determine each teacher's personality type preference. The MBTI is a 126-item forced choice questionnaire designed to elicit an individual's preference on four dichotomous scales or dimensions which allow separate indices for the four basic preferences of extraversion (E) or introversion (I), sensation (S) or intuition (N), thinking (T) or feeling (F), and judging (J) or Perception (P) (Foster & Horner, 1988; Myers & McCauley, 1985; Plessman, 1985; Schultz, 1985; Vogt & Holder, 1988). The four personality dimensions or indices based on Jung's theory of attitude (extraversion and introversion) and functions (perception and judgement) are (Foster & Horner, 1998; Keirsey & Bates, 1984; Lawrence, 1982; Myers & McCauley, 1985):

1. EI Index: **Extraversion (E)** Active involvement with people as a source of energy. Perception and judgement are focused on people and things. **Introversion (I)** A preference for solitude to recover energy. Perceptions and judgement are focused on concepts and ideas. Seventy-five percent of the general population prefer an extraverted orientation, while 25% prefer an introverted one.
2. SN Index: **Sensing (S)** Receiving or gathering information directly through use of the five senses. **Intuition (I)** Perceiving things indirectly, through hunches or a "sixth sense." Represents the unconscious incorporation of ideas or associations with outside perceptions. Three-fourths (75%) of the general population report a sensing preference, while the remaining one-fourth (25%) prefer intuition as a means of perceiving and gathering information.
3. IF Index: **Thinking (T)** Drawing conclusions based on a logical process using impersonal and objective facts. **Feeling (F)** Drawing conclusions based on personal values and subjective observations. The general population is divided fairly evenly between a preference for thinking (50%) and feeling (50%).

4. **JP Index: Judgement (J)** A preference to live in a structured, orderly, and planned fashion.

Perception (P) A preference to live in a more spontaneous and flexible fashion. Fifty percent of the general population report to be judging, while the other half report a preference for perception.

The judgement-perception index was not explicitly identified by Jung. Rather, this type scale was developed by Myers and Briggs to explain and identify an individual's dominant and auxiliary functions (Plessman, 1985).

The JP reference has two uses. First, it describes identifiable attitudes and behaviors to the outside world. Second, it is used, in conjunction with EI, to identify which of the two preferred functions is the leading or dominant function and which is the auxiliary. The recognition and development of facts about the JP junction are a major contribution of Briggs and Myers to the theory of psychological types. (Myers & McCaulley, 1985, p. 13)

Temperament Types. Keirsey and Bates (1984) have also developed a technique which examines Jungian psychological preferences known as temperament types. Temperament types (i.e., observed patterns of behavior) use Myers-Briggs psychological preferences to examine Jung's temperament combinations; however, the typology originally proposed by Jung is rearranged. While the Myers-Briggs uses 16 psychological types, Keirsey and Bates have categorized observed behavior into four broad temperament groups, according to two of the type components they have in common: sensing and judging (SJ), sensing and perceptive (SP), intuitive and thinking (NT), or intuitive and feeling (NF) (Barrett, Sorensen, & Hartsung, 1987). These specific combinations of Myers-Briggs' dichotomous indices were selected to mirror four temperament groups proposed by past philosophers and psychologists.

Even though the notion of temperament types came after Myers and Briggs had fully developed their ideas on personality type preferences, Keirsey and Bates viewed their

temperament types as the base upon which the 16 Myers-Briggs psychological types are built (Rojewski & Holder, 1990). They argued that the Myers-Briggs 16 personality types actually fall into these four combinations and have many common preferences, strengths, and weaknesses (Barrett, 1985). Research has shown that SP and SJ temperaments each represent approximately 38% of the general population, while the temperament types NT and NF each represent roughly 12% of the general population (Keirsey & Bates, 1984).

Validity. Since the MBTI was designed to implement Jung's theory of psychological type, its validation has generally been in the form of demonstrating relationships and outcomes predicted by theory.

Construct validity of the MBTI has been investigated by several researchers. Carlyn (1977) reports that numerous correlational studies indicate that "... a wealth of circumstantial evidence has been gathered and results appear to be quite consistent with Jungian Theory" (p. 469).

Myers and McCaulley (1985) give detailed results of research completed on each of the four dichotomous indices included on the MBTI. Significant correlations ($p = .01$) with other scales reflecting behavioral manifestations were present which tend to confirm construct validity.

Willis (1984) best summarizes the studies on construct validity by stating that, "Examination of data on individual MBTI scales demonstrates the behavior and attitudes which the MBTI appears to tap, suggesting a strong argument for construct validity" (p. 488).

Content validity has been tested on numerous personality measures including SAT performance, selected Strong Vocational Interest Blank Scales, and the Edwards Personal Preference Schedule. Through factor analysis, using these instruments, the MBTI has been found to be consistent with theoretical predictions (Myers & McCaulley, 1985)

Correlations ranging from the .50's to the .70's with other similar construct measures have been found through comparative testing (McCaulley, 1981).

Reliability. Internal consistency reliability estimates have been computed on type categories using split half scores. Using three separate studies from the center for applications of psychological type (CAPT) data base, items were paired which most resembled each other and correlate most significantly. Correlations ranging from .73 to .92 were found to exist consistently throughout age groups and from .43 to .94 on samples differing by education and achievements. Myers and McCaulley (1985) concludes that "the reliabilities are consistent with those of other personality instruments, many of which have longer scales than the MBTI" (p. 165). Reliability tends to remain stable up to twenty-five omissions for Form G.

Test-retest reliability estimates of type categories have been examined by several researchers. Correlations of continuous scores from ten studies with intervals from four to five weeks produced reliability coefficients of .77 to .93 for EI, .78 to .92 for SN, .56 to .91 for TF, and .63 to .89 for JP (Myers & McCaulley, 1985).

Carskadon (1979) reported test-retest reliability scores on Form G at seven weeks intervals for male and female students. The following scores were indicated for each scale: EI, .79 for males, .86 for females; SN, .84 for males, .87 for females; TF, .48 for males, .87 for females; JP, .63 for males, .80 for females.

Data Collection

The instrument (MBTI) was administered during the 1998 Summer Workshop for Beginning Technical Education Teachers. Three regional teacher educators and the department chair in technical education from West Virginia University Institute of Technology were responsible for administration of the MBTI. Results were returned along

with an interpretation of individual participant results provided by a certified MBTI interpreter.

Data Analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS Version 8.0 for Windows). Descriptive statistics were used to summarize the data.

Results

Table 1 depicts categorical information about the respondents. The respondents included more male (61.8%) beginning technical education teachers than female (38.2%). From this sample of beginning technical education teachers, slightly more than one-fifth (23.6%) had completed a bachelor's degree and higher. Teachers with an associate degree or less represented slightly more than three-fourths (76.4%) of the teachers.

Insert Table 1 about here

Ratio data regarding the respondents was reported in Table 2. The mean age of respondents was 40.08 ($SD = 7.01$). Beginning technical education teachers in this study indicated that they had some work experience prior to teaching with a mean of 17.41 years ($SD = 8.63$).

Insert Table 2 about here

Table 3 displays the distribution of beginning technical education teachers from the present sample among 10 of the 16 MBTI personality types. The four major MBTI type components were: ESTJ (32%), ESFJ (18%), ISFJ (12%), and ISTJ (9%).

Insert Table 3 about here

MBTI personality types are composed of four preferences from the eight type components available. The distribution of teachers within each of the eight individual type components was examined (see Table 4). Analysis showed that proportionately, beginning

secondary technical education teachers were more sensing (27%) / less intuitive (6%) and more judging (27%) / less perceptive (3%).

Insert Table 4 about here

Using data collected with the Myers-Briggs instruments, personality types were also examined according to Keirsey and Bates' (1984) temperament type groupings. Table 5 shows percentages of beginning technical education teachers with each temperament type according to their respective vocational content areas. Overall, the largest represented temperament type was that of sensing-judging (SJ = 47%). When compared with the distribution of temperament types found in the general population, the sensing – judging (SJ) and sensing-perceptive (SP) are more prevalent in the present population of beginning technical education teachers.

Insert Table 5 about here

Variable of Interest

Table 6 indicates the mean strength of MBTI preferences as perceived by respondents for selected variables. Overall, respondents reported a mean strength score of 24.50 for judging (J). Male respondents had a mean strength score of 23.38 for judging; however, female respondents were more likely to have a clear preference ($M = 26.46$) for sensing. Respondents within the 50 – 59 age bracket had a clear preference for judging ($M = 40.00$) as compared to the other seven MBTI preferences. Recipients of an associate degree and a master's degree reported a "clear" to "very clear" preference for thinking ($M = 21.88-41.00$).

Insert Table 6 about here

Discussion and Conclusions

The four MBTI personality types – ESTJ, ESFJ, ISFJ, and ISTJ – accounted for over two-thirds of the respondents of beginning technical education teachers. Individuals with these psychological types are often seen as practical and realistic. They tend to solve

problems by relying on past concrete experiences and prefer organization and structure. Preference for six MBTI type (ENTP, INTP, ISTP, ENFJ, ENTJ, and ESTP) was consistently low. A large proportion of trade and industrial education teachers reported a preference for extraversion-sensing-thinking-judging (ESTJ). These results were consistent with findings from previous studies (Barrett, 1991, McClain & Horner, 1988; Sikora, 1997).

Overall, beginning technical education teachers in this study were more likely to report a higher preference for sensing (S) and judging (J).

With a preference for sensing (S), beginning technical education teachers are more likely to work with known facts than look for possibilities and relationships. On the other hand, with a preference for judging (J), beginning technical education teachers probably like a planned, decided, orderly way of life better than a flexible, spontaneous way. In this study, health occupations education teachers reported a higher preference for introversion (I) than either a normative group of the general population or one of high school teacher population (Barrett, 1985; Lawrence, 1982). This finding suggests that health occupations education teachers probably are more at home in the inner world of ideas than in the outer world of people and things.

Beginning secondary technical education teachers overwhelmingly preferred a sensing-judging (SJ) temperament. This finding suggests that individuals with this temperament (SJ) are seen as organized, dependable, and conservative. They tend to solve problems by reliance on past experiences, and they dislike ambiguity. Respondents were less likely to have a preference for an intuitive-feeling (NF) temperament type.

Beginning teachers who had completed a master's degree program reported the highest MBTI mean score preference ($M = 41.00$) for thinking (T). These teachers were more likely to base their judgement on interpersonal analysis than on personal values. Respondents within the 50-59 age bracket reported the highest MBTI mean score preference ($M = 38.50$).

for sensing (S). With a preference for sensing, these individuals probably would rather work with know facts than look for possibilities and relationships. This finding may also suggest that with maturity, people are more likely to report their preferences with a greater consistency.

Recommendations

1. A replication of this study should be conducted with a larger sample size.
2. Teacher educators should provide prospective beginning secondary technical education teachers with ample opportunity to use all types of learning strategies and to strengthen those types which are not normally preferred.
3. Inservice training programs on personality type should be developed to assist beginning secondary technical education teachers in understanding their own personality preferences, and the preferences of their students. Such an understanding could allow teachers to improve their instructional competencies which could in turn improve the learning outcomes of their students.
4. Secondary school administrators, especially those with responsibilities for instructional improvement and evaluation, should seek strategies which might help certain types of teachers to become more proficient in their weaknesses. Knowledge of type differences among teachers could aid instructional supervisors in understanding, appreciating, and strengthening the various personality types within their instructional staff.

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Table 1.

Categorical Demographic Information (N = 34)

Variable of Interest	Frequency	Percentage
Gender:		
Female	13	38.2
Male	21	61.8
Highest Educational Level:		
High School Graduate	6	17.6
Trade/Technical/Training	4	11.8
Some College (no degree)	8	23.5
Associate Degree	8	23.5
Bachelor's Degree	6	17.6
Master's Degree	2	6.0
Occupational Career Field (as classified by MBTI):		
(before entering teaching)		
Architecture/Engineering	4	11.8
Art/Design Music	2	6.0
Business	1	3.0
Science	3	8.8
Medicine/Health Services	9	26.2
Machine Trade	6	17.6
Structural Work	7	20.6
Processing	2	6.0
Level of Job Satisfaction:		
(before entering teaching)		
Very Satisfied	23	67.6
Somewhat Satisfied	10	29.4
Somewhat Dissatisfied	1	3.0

Table 2

Ratio Demographic Information (N = 34)

Variable of Interest	Mean	Std. Dev.
Age (years)		
Range 27-56	40.08	7.01
Years employed (in pervious occupation)		
Range 5-40	17.41	8.63

Table 3.

Distribution of Selected Beginning Technical Education Teachers by MBTI Type and Content Area

MBTI Type	Teachers by Content Area		
	All Teachers	Health Occp. Edu.	Trade and Ind. Edu.
	(N = 34)	(n = 9)	n = 25
	N %	n %	n %
ESTJ	11 (32)	2 (22)	9 (36)
ESFJ	6 (18)	2 (22)	4 (16)
ISFJ	4 (12)	2 (22)	2 (8)
ISTJ	3 (9)	2 (22)	1 (4)
ENTP	2 (6)	0 (0)	2 (8)
INTP	2 (6)	0 (0)	2 (8)
ISTP	2 (6)	0 (0)	2 (8)
ENFJ	1 (3)	1 (11)	0 (0)
ENTJ	1 (3)	0 (0)	1 (4)
ESTP	1 (3)	0 (0)	1 (4)

Note. * Percentages are rounded to the nearest full point, therefore, totals may not equal 100 percent.

Table 4.

Distribution of Selected Beginning Technical Education Teachers by MBTI Type Components.

	N	Personality Factors ^a							
		E	I	S	N	T	F	J	P
		Percentage(s)							
All Teachers	34	18	21	27	6	6	9	27	3
Health Occupations Education	9	11	33	33	0	11	22	33	0
Trade & Industrial Education	25	20	16	68	8	28	4	24	4
High School Teachers ^b		70	30	70	30	50	50	55	45
General Population ^c		75	25	75	25	50	50	50	50

^aComponents of MBTI personality type: E = Extraversion, I = Introversion, S = Sensing, N = Intuition, T = Thinking, F = Feeling, J = Judgment, P = Perception.

^bType component data for high school teachers taken from G. D. Lawrence (1982).

^cType component data for the general population taken from Keirsey & Bates (1984) and Rojewski & Holder (1990).

Table 5.

Percentages of Selected Beginning Technical Education Teachers by MBTI Temperament Type Groups.

	N	Temperament Types ^a			
		SP	SJ	NT	NF
		Percentage(s)			
All teachers	34	24	47	18	11
Health Occupation Education	9	22	56	11	11
Trade and Industrial Education	25	4	44	24	28
General Population ^b		38	38	12	12

^aComponents of MBTI temperament type: SP = Sensing, Perceptive, SJ = Sensing, Judging, NT = Intuitive, Thinking, NF = Intuitive, Feeling

^bType component data for the general population taken from Keirsey & Bates (1984) and Rojewski & Holder (1990).

Table 6.

Mean^a Strength of MB11^b Preferences as Perceived by Participants for Selected Variables (N = 34)

Variable of Interest		Preference for E M SD	Preference for I M SD	Preference for S M SD	Preference for N M SD	Preference for T M SD	Preference for F M SD	Preference for J M SD	Preference for P M SD
Gender:									
Male	21	<u>11.95</u> 13.23	<u>6.57</u> 11.00	<u>21.00</u> 18.64	<u>2.19</u> 8.48	<u>17.05</u> 14.68	<u>2.52</u> 5.90	<u>23.38</u> 18.93	<u>4.67</u> 9.77
Female	13	<u>8.23</u> 7.57	<u>8.00</u> 13.38	<u>26.46</u> 19.65	<u>4.38</u> 8.37	<u>14.23</u> 20.38	<u>5.85</u> 9.10	<u>26.31</u> 15.23	<u>0.69</u> 2.50
For entire population	34	<u>10.53</u> 11.42	<u>7.12</u> 11.79	<u>23.09</u> 18.03	<u>3.03</u> 8.38	<u>15.97</u> 16.84	<u>3.79</u> 7.34	<u>24.50</u> 17.42	<u>3.15</u> 8.00
Age:									
25-29	1	<u>37.00</u> 0.00	—	<u>33.00</u> 0.00	—	<u>37.00</u> 0.00	—	<u>35.00</u> 0.00	—
30-39	17	<u>8.35</u> 8.58	<u>5.82</u> 11.95	<u>21.82</u> 18.97	<u>1.53</u> 4.61	<u>13.88</u> 16.47	<u>4.06</u> 7.14	<u>21.59</u> 18.24	<u>4.12</u> 10.21
40-49	12	<u>11.08</u> 12.55	<u>8.75</u> 12.56	<u>18.92</u> 19.32	<u>6.42</u> 12.64	<u>17.50</u> 16.49	<u>2.83</u> 7.44	<u>22.58</u> 17.38	<u>3.08</u> 5.85
50-59	4	<u>11.50</u> 14.15	<u>9.50</u> 12.01	<u>38.50</u> 15.00	—	<u>15.00</u> 12.20	<u>6.50</u> 9.95	<u>40.00</u> 6.22	—
For the entire population	34	<u>10.53</u> 11.42	<u>7.12</u> 11.79	<u>23.09</u> 18.93	<u>3.03</u> 8.38	<u>15.97</u> 16.84	<u>3.79</u> 7.34	<u>24.50</u> 17.42	<u>3.15</u> 8.00
Education:									
High school grad.	6	<u>13.67</u> 13.11	<u>8.33</u> 14.36	<u>29.00</u> 20.00	—	<u>12.33</u> 18.69	<u>2.67</u> 4.18	<u>19.67</u> 16.07	<u>5.00</u> 8.15
Trade and technical	4	<u>21.00</u> 13.17	—	<u>32.50</u> 19.49	—	<u>22.75</u> 17.17	<u>1.75</u> 3.50	<u>35.50</u> 5.74	—

(table continues)

Table 6. (continued)

Variable of Interest		Preference for E M SD	Preference for I M SD	Preference for S M SD	Preference for N M SD	Preference for T M SD	Preference for F M SD	Preference for J M SD	Preference for P M SD
Some college and no degree	8	<u>12.00</u> 12.50	<u>4.00</u> 8.31	<u>25.63</u> 19.16	<u>2.13</u> 6.01	<u>7.00</u> 10.00	<u>5.50</u> 8.50	<u>29.88</u> 19.72	<u>1.13</u> 3.18
Associate degree	8	<u>2.13</u> 3.83	<u>9.63</u> 12.33	<u>18.25</u> 18.41	<u>0.50</u> 1.07	<u>21.88</u> 16.37	<u>3.38</u> 9.55	<u>17.50</u> 17.94	<u>1.50</u> 2.83
Bachelor's degree	6	<u>9.50</u> 10.63	<u>13.83</u> 15.69	<u>14.17</u> 17.01	<u>10.17</u> 15.94	<u>10.83</u> 15.25	<u>5.83</u> 9.02	<u>23.67</u> 19.08	<u>9.33</u> 16.05
Master's degree	2	<u>11.00</u> 8.49	—	<u>22.50</u> 31.82	<u>10.50</u> 14.85	<u>41.00</u> 19.80	—	<u>26.00</u> 24.04	—
For entire population:	34	<u>10.53</u> 11.42	<u>7.12</u> 11.79	<u>23.09</u> 18.93	<u>3.03</u> 8.38	<u>15.97</u> 16.84	<u>3.79</u> 7.34	<u>24.50</u> 17.42	<u>3.15</u> 8.00
Vocational Content Area:									
Health Occupations Education	9	<u>7.44</u> 8.56	<u>11.56</u> 14.91	<u>27.56</u> 16.88	<u>2.11</u> 6.33	<u>10.67</u> 18.67	<u>7.67</u> 10.37	<u>28.78</u> 13.40	—
Trade and Industrial Education	25	<u>11.64</u> 12.24	<u>5.52</u> 10.34	<u>21.48</u> 19.69	<u>3.36</u> 9.10	<u>17.88</u> 16.11	<u>2.40</u> 5.53	<u>22.96</u> 18.66	<u>4.28</u> 9.10
For entire population	34	<u>10.53</u> 11.42	<u>7.12</u> 11.79	<u>23.09</u> 18.93	<u>3.03</u> 8.38	<u>15.97</u> 16.84	<u>3.79</u> 7.34	<u>24.50</u> 17.42	<u>3.15</u> 8.00

Note. ^a The preference score limits are: slight 1 to 9, moderate 11 to 19, clear 21 to 39, and very clear 41 or higher.

^b Components of MBTI personality type: E = Extraversion, I = Introversion, S = Sensing, N = Intuition, T = Thinking, F = Feeling, J = Judgment, P = Perception.